Fig. 4. *Conosmilia anomala*: *a*, nat. size; *b*, columella, magn. 4 diams.; *c*, costæ, magnified 4 diams.; *d*, transverse section, magn. 4 diams. (one system is closed below by endotheca); *e*, septum with endotheca, magn. 4 diams.

Fig. 5. *Conosmilia striata*: *a*, nat. size; *b*, costæ, magn. 6 diams.; *c*, transverse section, magn. 6 diams.

Fig. 6. *Antillia lens*: *a*, nat. size, view from above and side; *b*, base, nat. size; *e*, side view (part of), magn. 4 diams.; *d*, base (part of), magn. 4 diams.; *e*, septum, magn. 4 diams.

XXIV.—*Notes on the Australian Species of* Arripis. By Frederick M'Coy, Professor of Natural Science in the University of Melbourne, and Director of the National Museum at Melbourne.

I find that nearly all the scales of the Victorian fishes of the genus *Arripis* have a more or less distinct fan-like structure of the base, from the supposed absence of which the genus was originally named.

Having dissected a great number, I am sure there must be some mistake (probably a clerical error) in Dr. Günther's statement that the pyloric appendages are from seventeen to fifty in number, as I find them always about one hundred and sixty.

The Australian species to be found in books are *Centropristes Georgianus* (Cuv.), *C. salar* (Richardson), *C. Tasmanicus* (Homb.), *C. truttaceus* (Cuv.), *Perca trutta* (Cuv.), and probably *Perca marginata* (Cuv.). I have perfectly satisfied myself, from a laborious examination of a great number of fresh specimens, at different seasons and of all ages, that the whole of these six supposed species should be reduced to one, and that the more important characters relied upon by Cuvier, Richardson, and Günther are the peculiarities only of different ages of the fish.

The adult form is the *Centropristes* (*Arripis*) *Georgianus* (Cuv.) and the *C. Tasmanicus* (Homb.). It reaches nearly 2 feet in length; and, although abundant in the market, it is eaten with great hesitation, owing to the many cases (sometimes fatal) reported of poisonous effects produced on certain persons eating it, although others at the same table suffered comparatively little. It is the fish improperly called "Salmon" by the colonists. It is of a nearly uniform pale olive-colour. Probably from having counted the fin-rays of so large a number of specimens, I am able to announce an extraordinary variation in this character: thus the pectorals vary from 14 to 16, the soft anals from 9 to 11, soft dorsals from 16 to 19.

The young, up to about 10 or 11 inches in length, are commonly supposed by the colonists to be a different fish, which they call "Salmon-trout" in the markets; and they are the

Centropristes or *Arripis salar* of Richardson and Günther's works. They have the belly silvery, back olive, sides rich green with vertical darker bands, and four or five longitudinal rows of round yellow spots, like lacquered brass, on the sides. This style of colouring, so different from that of the adult, is most strongly marked in the young of three or four inches in length; and I have traced in the most gradual and satisfactory way its gradual confusion and obliteration as the size approaches 1 foot, beyond which only traces can be seen of any difference from the nearly uniform dull colouring of the adult. The superior size of the eye, the difference of proportional distance between the orbits, and the shape of the forehead, relied upon by authors amongst the characters separating the *C. Georgianus* from the others, are more and more exaggerated as the size and age of the individuals are less and less.

In small, very young individuals the posterior edge of the præoperculum is not denticulated; and this is the great character relied on by Cuvier and Günther for the specific distinction of the *C. truttaceus* in their works (the fin-rays of the adult varying to the amount I have shown above); but I have clearly demonstrated the gradual appearance and development of the serration with increase of size; so that this is certainly (as might even be seen by observing the relative lengths of the radiating ridges forming the denticles going to the posterior and inferior edges of the præoperculum respectively in an old fish) only a character of immaturity.

Living specimens of the young fish three or four inches long have the caudal fin bright yellow, with a broad posterior margin of rich black; both these colours fade quickly, and totally disappear in spirit or on a dried skin. Now as this particular colouring, noted by Cuvier on a drawing from life of a fish of which he had never seen a specimen, was the foundation of the species *Perca marginata* in his 'Histoire Naturelle des Poissons,' and all the other characters are those found likewise in the young of *Arripis Georgianus*, I have no doubt, from my observation of these fugitive colours in the living fish, that *Perca marginata* should be added to the synonyms of the one Australian species of *Arripis* found here—the *A. Georgianus*. I mean to publish figures from the life, shortly, in the 'Decades of the Prodromus of the Zoology and Palæontology of Victoria,' which I am preparing as part of the "Memoirs of the Melbourne Museum," the establishment of which occupies all my leisure so pleasantly.

Melbourne, June 24, 1865.